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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,280	10/28/2003	Jason T. Zapf	00-206	3956

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EXAMINER	
KRASS, FREDERICK F	

ART UNIT	PAPER NUMBER
1614	

DATE MAILED: 12/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/695,280	ZAPF ET AL.	
	Examiner	Art Unit	
	Frederick F. Krass	1614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-25 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-25 is/are rejected.

7)☐ Claim(s) ____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date 11-26-05.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

Information Disclosure Statement

The Information Disclosure Statement filed November 26, 2003 fails to comply with 37 C.F.R. 1.98(a)(2), which requires a legible copy of each cited foreign patent document, non-patent literature publication, or relevant portion thereof. (No such copies are present in the examiner's "E-DAN" electronic file). It has been placed in the application filed, but reference(s) YYY has (have) not been considered due to failure to enclose a legible copy of the reference(s).

Claim Informalities

The following informality is noted and should be corrected in responding to this Office action:

Claim 24 does not end in a period.

Indefiniteness Rejection

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1) The metes and bounds of the term "% silica coating parameter value" in claims 1, 9, 17, 23 and 25 is unclear because the basis for its determination is not set forth, e.g., percent by weight based on the weight of the composite, percent by volume based on the volume of boehmite, etc. See Honeywell Intl., Inc. v. Intl. Trade Commn., 341 F.3d 1332, 1340 (Fed. Cir. 2003). (Holding that where a claimed value varies with its method of measurement and several alternative methods of measurement are available, the claimed value is indefinite unless the particular method of measurement is recited.) Note also that the description given at paragraph [0071] of the instant specification outlines a method for calculating the % silica "coating", instead of a "coating parameter value". It is not clear if the former and latter are synonymous.

2) Claim 18 is similarly indefinite insofar as the frame of reference for the percent weight calculation is not provided. This can be overcome by inserting the phrase --- , based on the weight of said dentifrice --- immediately before the period ending the claim.

3) Claims 1, 9, 17, 23 and 25 are rejected insofar as the term "about", as it appears in connection with the term "% silica coating parameter value", is viewed as indefinite.

The term "about" permits some tolerance, and is normally definite. See, for example, In re Ayers, 69 USPQ 109 (CCPA 1946), where "at least about 10%" was held to be anticipated by a teaching of a content "not to exceed about 8%." Where close prior art exists, however, the normally definite term "about" can become indefinite, with Applicant bearing the burden of establishing that the term is sufficiently clear to avoid such art. See specifically Amgen v. Chugai, 927 F.2d 1200 (Fed. Cir. 1991), where the court found the recitation of a specific activity of "about" 160,000 indefinite since it gave no hint as to which value between the prior art value of 128,620 and 160,000 constituted infringement. As noted at page 1218 of the decision, the holding was further supported by the fact that "nothing in the specification, prosecution history, or prior art provides any indication as to what range of specific activity is covered by the term".

In this case, nothing in the instant specification, prosecution history, or prior art provides any indication as to what values would be covered by the claimed term "about", as used in connection with the term "% silica coating parameter value". Moreover, close prior art (USP 6,258,137 B1 and 4,781,982: see subsections "1)" of the "Anticipation" and "Obviousness" sections infra) exists which is seen to fairly invoke a finding of indefiniteness under the reasoning of the Chugai holding.

Anticipation Rejection

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1) Claims 1 and 9 rejected under 35 U.S.C. 102(b) as being anticipated by Garg et al (USP 6,258,137 B1).

The prior art discloses silica-coated alumina particles made by heat-treating a silica/ boehmite gel; conversion to alpha alumina is not 100 percent (see col. 3, line 49). Particles so produced have a surface area of as low as $50m^2/g$ (see the abstract) and a silica loading level of up to about 10 percent by weight (col. 4, lines 46-52). The latter value of "about 10" is viewed as overlapping the value of "about 15" as recited by instant claim 9, since no clear line of demarcation exists with regard thereto due to ambiguity concerning the method of measurement, as well as a lack of guidance from the specification on the extent of variation permitted in the relative term "about", as discussed in the "Indefiniteness" rejection supra.

2) Claims 1, 8 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by Murrell et al (USP 4,708,945).

The prior art discloses silica-coated alumina particles made by heat-treating a silica/boehmite composition; conversion to alpha alumina is not 100 percent (col. 2, lines 64 and 65). Particles so produced have a silica loading level is 1-50 percent (col. 5, lines 18-20). Working examples 5 and 8 disclose particles further treated with vanadium to achieve surface areas falling within the scope of the instant claims ($5m^2/g$ and $30m^2/g$, respectively). The instant claims employ the open-ended transitional phrase "comprising", which does not exclude that additional coating agent.

Obviousness Rejection

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

1) Claims 1-3, 5, 6, 8, 13, 14, 17, 18 and 22-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Musselman et al (USP 4,781,982).

The prior art discloses alumina particles having particle sizes of 1 to 20um (col. 3, lines 27-44) which have been surface treated with an aqueous silicate solution (col. 2, lines 42-44; the solution may be acidic (as required by instant claim 23) as specified at col. 3, lines 65-67) to provide a silica coating level of up to about 0.2 weight percent (col. 2, lines 48-50), and a surface area of $1m^2/g$ or less (col. 3, lines 47-51). The coated particles have increased fluoride compatability when incorporated into dentifrices together with thickeners, humectants, etc. in amounts of 2-70 percent by weight. See especially Table I, wherein the decrease in fluoride absorption from 25 percent (untreated) to 3 percent (silica treated) is clearly sufficient to meet the values recited by instant claims 13 and 14.

The alumina used may be boehmite (alpha alumina monohydrate): see col. 2, lines 13-15. The prior art disclosure is not anticipatory since boehmite must be selected from various alternative alumina forms at the first paragraph of col. 2, and silicate from

various coating agents at col. 2, lines 32-35; note that the prior art working example discloses silica coated aluminum trihdrate instead of boehmite. It would have been obvious in a self-evident manner to have made that selection, however, motivated by boehmite's unambiguous disclosure, and consistent with the basic principle of patent prosecution that a reference should be considered as expansively as is reasonable in determining the full scope of the contents within its four corners.

Regarding the disclosure by the prior art of "about 0.2" percent silica coating, the examiner again views this as overlapping the instant value of "about 5" as recited by instant claim 1, since no clear line of demarcation exists with regard thereto due to ambiguity concerning the method of measurement, as well as a lack of guidance from the specification on the extent of variation permitted in the relative term "about", as discussed in the "Indefiniteness" rejection supra.

2) Claims 2, 3, 5 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murrell et al (USP 4,708,945).

The prior art is discussed in subsection "2" of the "Anticipation" section supra, and differs from the instant claims insofar as particle sizes in the range of 1 to 20um are not specifically disclosed. The prior art does clearly suggest a particle size of "less than 80 microns" at col. 8, lines 3-5, however.

Normally, changes are not patentable where the difference involved is one of degree, not of kind; experimentation to find workable conditions generally involves the application of no more than routine skill in the art. In re Aller 105 USPQ 233, 235 (CCPA

1955). Similarly, the determination of optimal values within a disclosed range is generally considered obvious. In re Boesch, 205 USPQ 215 (CCPA 1980). Accordingly, it would have been obvious to have used lower particle sizes (20um or less) where same would have provided optimal performance, given the open-ended suggestion by the prior art to use sizes "less than 80 microns", and consonant with the reasoning of the cited case law.

Allowable Subject Matter

Claims 4, 7, 10-12, 15, 16, 19-21 and 25 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Claims 4, 7, 10-12, 15, 16 and 19-21 disclose compositions having characteristics making them ideal for use in dentifrices, and the prior art does not fairly suggest, teach or disclose such values. (USP 6,258,137 and USP 4,708,945 are not concerned with dentifrices; USP 4,781,982 does not suggest using sufficiently dense silica coatings to achieve such hardness and organic component compatibility values).

The prior art of record also does not fairly suggest, teach or disclose the particular method of claim 25 (conversion from aluminum trihdyrate to boehmite is actually opposite in order from the conversion used in USP 6,258,137 and USP 4,708,945; USP 4,781,982 uses boehmite *per se*, without conversion).

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frederick F. Krass whose telephone number is 571-272-0580. The examiner's schedule is 9:30AM – 6:00PM, Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christopher Low can be reached at 571-272-0951. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Frederick Krass
Primary Examiner
Art Unit 1614